OPERATOR'S MANUAL FOR:

M16A2 CARBINE, COMMANDO, 9mm SMG & M4 CARBINE

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WARNING: IF THIS FIREARM IS CARELESSLY OR IMPROPERLY HANDLED, UNINTENTIONAL DISCHARGE COULD RESULT AND COULD CAUSE INJURY, DEATH, OR DAMAGE TO PROPERTY.

WARNING: IF THE BARREL IS VERY HOT FROM FIRING THERE IS A RISK OF **COOK-OFF**. (That is, a round in the chamber discharging by absorbing heat from the barrel). A cook-off can occur any time after chambering a round in a very hot barrel. When this condition is suspected the chamber must be cleared immediately after firing. (See page 54 for more information).

WARNING: DO NOT ATTEMPT TO FIRE IF **WATER IS IN THE BARREL** FROM FORDING, HEAVY RAN OR THICK FOG. Open the bolt and allow water to drain before firing. Clean a wet firearm as soon as possible. (See page 55 for more information).

WARNING: ALWAYS BE AWARE OF POSSIBLE RISK FROM **DROPPING YOUR WEAPON**. SOME PARTS OF THE MECHANISM COULD BE DAMAGED. You may not see the damage, but if it is severe, the firearm may discharge and cause injury, death or damage to property. If your weapon has been dropped, have it checked by the unit armorer.

CAUTION: KEEP CLEAR AND KEEP OTHERS CLEAR OF THE **EJECTION PORT**. Spent cartridges are ejected with enough force to cause injury, and the ejection port must be unobstructed by your hand to insure safe ejection of live rounds. Never place fingers in ejection port; they could be burned by hot metal or injured by the bolt moving forward.

CAUTION: NEVER DRY FIRE YOUR WEAPON WHEN THE **RECEIVERS** ARE **OPEN** AND DO NOT ALTER PARTS AS THE LEVEL OF SAFETY COULD BE REDUCED.

CAUTION: READ WARNINGS INSIDE FRONT COVER AND FOLLOW PROCEDURES IN THIS MANUAL TO MINIMIZE RISK OF ACCIDENTS.

CAUTION: USE ONLY AUTHORIZED AMMUNITION.

SAFETY DEPENDS ON YOU

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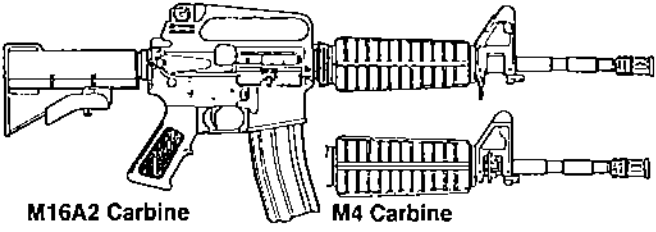
Note:
Most illustrations and information in this manual are common to all weapons described. Variations will be identified with the particular weapon and may be disregarded if not applicable to yours.

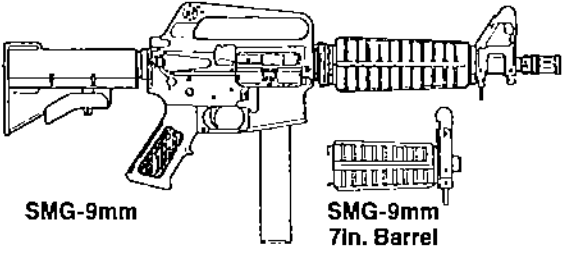
ILLUSTRATION OF WEAPONS



M16A2 Carbine

M4 Carbine

M16A2 Commando



SMG-9mm

SMG-9mm
7In. Barrel

DESCRIPTION

This operator's manual describes the following weapons and includes information on some features which may be included with variations of them:

M16A2 CARBINE
M4 CARBINE
M16A2 COMMANDO
9mm SMG (Sub Machine gun)
9mm SMG (7in. barrel)

They are lightweight, air cooled, magazine fed weapons with telescoping buttstocks. They are capable of automatic or semiautomatic fire, with the M4 Carbine featuring 3 round Burst control. The Commando and Carbines are gas operated. The 9mm SMGs have a blowback action. All are easily opened to expose the working parts for inspection and cleaning. A bayonet knife may be used on Carbines. An M203 Grenade Launcher may also be installed on Carbines, and the M4 Carbine is designed to simplify that installation.

CHARACTERISTICS OF WEAPONS

TYPE OF WEAPON:	
CARBINES & COMMANDO	Gas operated, 5.56x45mm caliber
SMGs 9mm	Blowback, 9x19mm NATO or Parabellum caliber
ALL	Air cooled, magazine fed, semiautomatic and full automatic action. M4 has 3 round burst control. Other variants may be semiauto only or have 3 round burst control. Sights vary. (Field sights, fully adjustable sights, flat top upper receiver for optical sights and a carrying handle with sights built in are all described in this manual)

OVERALL LENGTH:

(WITH COMPENSATOR)	(BUTTSTOCK EXTENDED)		(BUTTSTOCK RETRACTED)	
CARBINE	33 in	84cm	29.8 in	76cm
COMMANDO	30.4 in	77cm	27.1 in	69cm
9mm SMG	29 in	74cm	25.5 in	65cm
9mm SMG	24.3 in	61.6cm	21 in	53.3cm

BARREL LENGTH:

CARBINE	14.5 in	37cm	(Rifle twist 1 in 7 in)
COMMANDO	11.5 in	29cm	(Rifle twist 1 in 7 in)
9mm SMG	10.5 in	27cm	(Rifle twist 1 in 10 in)
9mm SMG	7.0 in	17.8cm	(Rifle twist 1 in 10 in)

Weight:	(Without Magazine & Sling)		(With Magazine & Sling)	
Carbine (M16A2)	5.98 lb	2.71kg	7.42 lb	3.37kg (30rd.)
Carbine (M4)	6.18 lb	2.80kg	7.67 lb	3.48kg (30rd.)
Commando	5.38 lb	2.44kg	6.65 lb	3.02kg (30rd.)
SMG 9mm	5.75 lb	2.61kg	7.53 lb	3.42kg (32rd.)
SMG 9mm (7 in. Barrel)	5.41 lb	2.45kg	7.13 lb	3.23kg (32rd.)

Ammunition:

Carbine and Commando	5.56 x 45mm NATO Cartridge (M855 or SS109) OR 5.56 x 45mm US Standard Cartridge (M193 BALL)
9mm SMG	9 x 19mm NATO Cartridge (9mm Parabellum)

FIRING CHARACTERISTICS

Cyclic Rate of Fire:

700-1000 rounds per minute. (Theoretical number of rounds which could be fired full auto in one minute.)

Rate of Fire:

Semiautomatic — 45-65 rounds per minute. (Number of rounds which could be fired in one minute with selector on "semi," dependent on operator's dexterity and time taken to replace magazines.)

Burst (3 rounds auto) or Auto — 150-200 rounds per minute. (Number of rounds which could be fired in one minute with selector on Burst or Auto including time to replace magazines.)

Sustained — 12-15 rounds per minute. (Recommended number of rounds which can be fired every minute for extended periods.)

Carbines and Commando

With the 1 in 7 inch twist in the rifling of the M16A2 Carbine, M4 Carbine and Commando weapons, either M193 or M855 ammunition may be fired. Muzzle velocity, muzzle energy, and maximum effective range will vary with barrel length and the ammunition used. Using M855 ammunition muzzle velocity will be reduced, while muzzle energy and maximum effective range are increased for carbines.

MUZZLE VELOCITY AND ENERGY

AMMUNITION	5.56 x 45mm US STD M193		5.56 x 45mm NATO M855 (or SS109)		9mm NATO or 9mm Parabellum	
Muzzle Velocity:	feet/sec.	meters/sec.	feet/sec.	meters/sec.	feet/sec.	meters/sec.
Carbines	3050	930	2870	875	—	—
Commando	2900	884	2610	796	—	—
9mm SMG	—	—	—	—	1300	396
9mm SMG (7in. Barrel)	—	—	—	—	1200	365
Muzzle Energy	foot pounds	joules	foot pounds	joules	foot pounds	joules
Carbines	1134	1537	1136	1540	—	—
Commando	1026	1391	938	1272	—	—
9mm SMG	—	—	—	—	431	584
9mm SMG (7in. Barrel)	—	—	—	—	366	498

OPERATING FEATURES

"Operating Features" tells you names of parts and describes their function.

Charging Handle (1): Retracts bolt carrier.

Sights (2,4): Used to align weapon with target. Rear sight (2) is either fully adjustable or it is a Field sight, adjustable for windage only. Front sight (4), when used with Field sight, is used to adjust elevation. When used with a fully adjustable rear sight the front sight is adjusted only on zeroing. Some variants have a sight rail (2a) built into the upper reciver to which a detachable carrying handle (2b) or optical sight can be secured. Some models have markings on these rails to show locations for mounting accessories. The markings allow the user to safely place the accessory back in the same location it was mounted in before being removed. Note that fully adjustable sight on removeable carrying handle has different elevation adjustment to sight on a standard carrying handle.

Handguards (3): Protects shooter's hand from heat of barrel.

Compensator (5) (Carbine & Commando): Reducos muzzle flash, helps keep muzzle from rising during firing, protects muzzle end of barrel and reduces signature when firing prone.

Flash Suppressor (5) (9mm Carbine): Reduces muzzle flash and protects muzzle end of barrel.

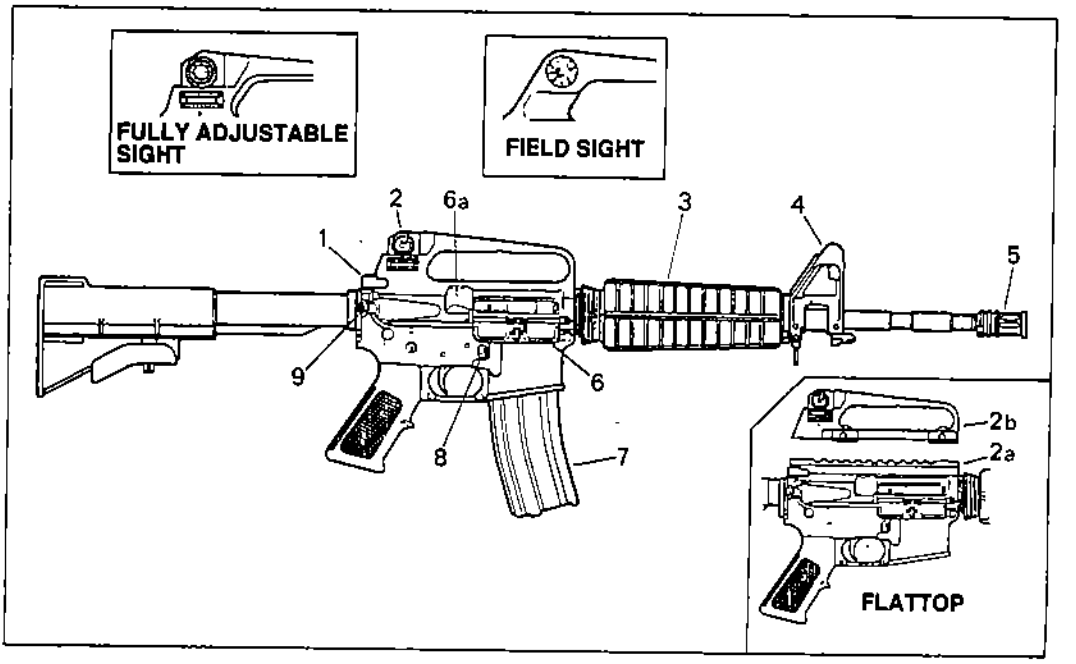
Ejection Port Dust Cover (6): Keeps dirt and dust out of chamber. When bolt carrier moves forward or rearward cover opens automatically.

Deflector (6a): Deflects cartridges clear of left handed shooters.

Magazine (7): 30 Round capacity (some have 20 round capacity). 32 on 9mm SMG.

Magazine Release Button (8): Releases magazine for removel.

Forward Assist Assembly (9) (Carbine & Commando): Provides a means of pushing bolt carrier forward when bolt fails to close and lock. **Note:** When you have to use the Forward Assist it is time to clean your weapon.


FULLY ADJUSTABLE SIGHT
FIELD SIGHT
1
2
6a
3
4
5
9
6
8
7
2b
2a
FLATTOP

Bolt Catch (10): Holds bolt carrier in open position.

Selector Lever (11): Selects:
AUTO — FULL AUTO
SEMI — SEMIAUTOMATIC
SINGLE SHOT.
SAFE — TRIGGER LOCKED

The M4 Carbine and some other models may have AUTO replaced by
BURST — 3 round AUTO BURST
or
SEMI only.

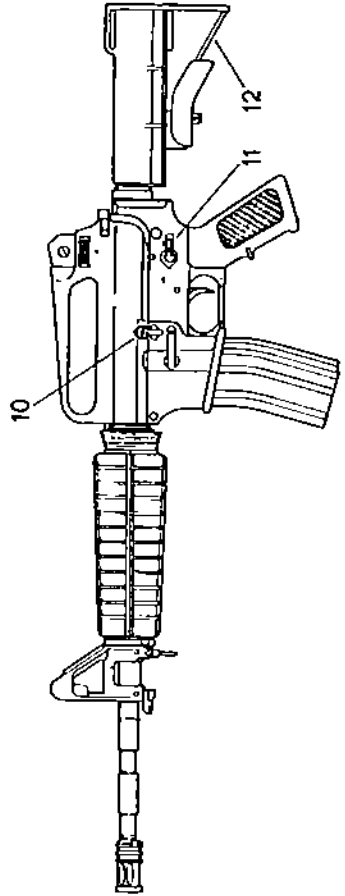
Buttstock (12): Sliding buttstock extends for shoulder firing . . . retracts for close combat and stowage.

CONVERSION NOTE: Colt Model R0634

An armorer may convert the SEMI-AUTO Police version of the 9mm SMG to fire full auto by changing some parts. Details of how to remove and install parts of the fire control mechanism are contained in Colt Manual CM 102 (2nd Edition) Chapter III. When converting to full auto, the armorer should follow these instructions to:

1. Remove and replace the Selector, Fire Control (Full AUTO Part No. 64564).
2. Remove a filler pin in the auto sear location.
3. Install an Assembly, Automatic Sear (Part No. 61622) and Pin, Automatic Sear (Part No. 61615)
4. Assemble and test the converted weapon.
5. On Lower Receiver label "Auto" position of Selector, Fire Control.

CAUTION: CONVERSION TO FULL AUTO CAPABILITY WITHOUT IDENTIFICATION AS IN STEP 5 COULD LEAD TO INADVERTENT FULL AUTO DISCHARGE RESULTING IN INJURY, DEATH OR DAMAGE TO PROPERTY.


12
11
10

MAINTENANCE

Maintenance instructions tell the operator how to field strip, clean, lubricate, assemble and do a functional check on the weapon. A table at the end of this sections deals with malfunctions and troubleshooting.

Tools required	One rifle cleaning kit.
Materials required:	Dry, lint free cloth.
	Lubricating oil, semi-fluid MIL-L-46000A (LSA) (or equivalent).
	Bore cleaning fluid.

Note: If weapon has been used in salt air, water, mud, or sand, it must be given to an armorer for complete disassembly, cleaning and inspection.

Note: Carbine and Commando weapons have a bolt and bolt carrier assembly, see page 13. 9mm SMG has a bolt which looks like a bolt carrier; see illustration on page 12.

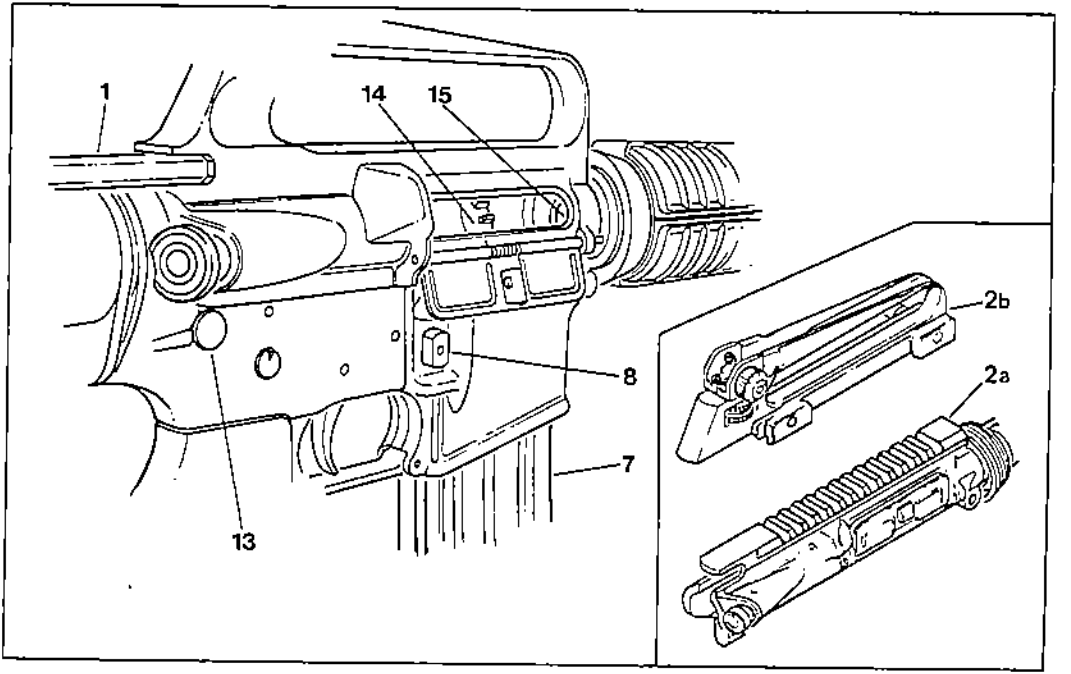
FIELD STRIPPING

CAUTION: UNLOAD BEFORE FIELD STRIPPING.

ALL WEAPONS

1. Press magazine release button (8) and remove magazine (7).
2. Pull charging handle (1) to rear, check that chamber (15) is empty; release charging handle.
3. Ensure bolt is fully forward, push left end of takedown pin (13) into receiver. Pull pin to right until stopped by detent. Open receivers.
4. Pull charging handle about three inches rearward, remove bolt carrier (14).
5. Remove charging handle by pulling down and to the rear.

Note: Some Carbines have a removable carrying handle (2b) or optical sights. When one is installed, it can be left in place for routine cleaning or it can be removed by loosening 2 nuts, tilting sideways and lifting it off the sight rail (2a).


1
14
15
2b
2a
8
7
13

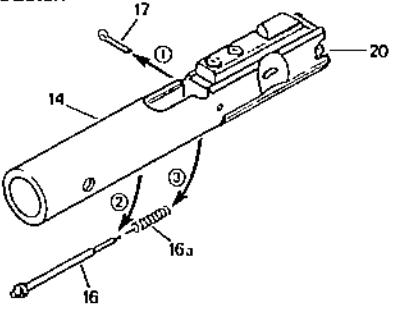
FIELD STRIPPING (Cont.)

BOLT AND BOLT CARRIER — Carbines and Commando Only

6. a. Push out firing pin retaining pin (17).
   b. Drop out firing pin (16), through back of bolt carrier.
   c. Rotate bolt (21) to right until cam pin (18) is clear of bolt carrier key (26). Rotate cam pin ¼ turn and remove. Pull bolt (21) from bolt carrier (14).
   d. Hold the extractor down to control the spring tension, carefully push out extractor pin (19) and remove extractor (20). Do not remove extractor spring from extractor.

BOLT — 9mm SMG ONLY

6. a. Push out firing pin retaining pin (17).
   b. Firing pin (16) will be forced out through underside of bolt by firing pin spring (16a).
   c. Remove firing pin spring (16a) from firing pin (16). Do not remove extractor.



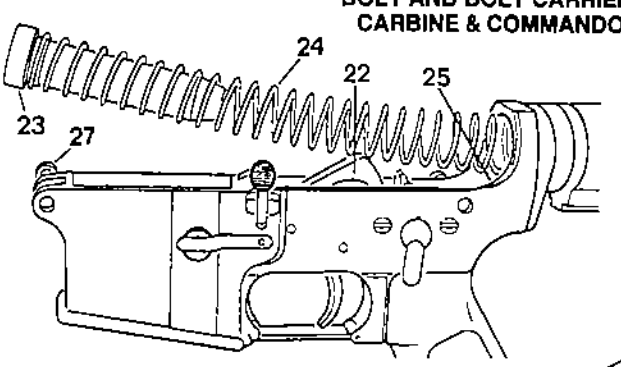
ALL WEAPONS

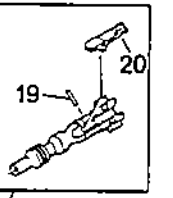
7. Push pivot pin (27) to right and pullout detent. Separate receivers. (Receivers need not be separated for routine cleaning).

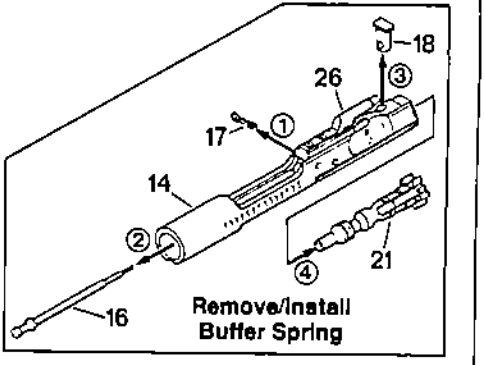
8. With hammer (22) in cocked position push buffer (23) rearward to control the spring tension. Press buffer retainer (25) down. Slowly ease buffer forward until clear of retainer.

9. Continue to hold buffer against spring tension, press hammer (22) down just enough to clear buffer and remove buffer (23) and action spring (24).

BOLT AND BOLT CARRIER ASSEMBLY
CARBINE & COMMANDO WEAPONS

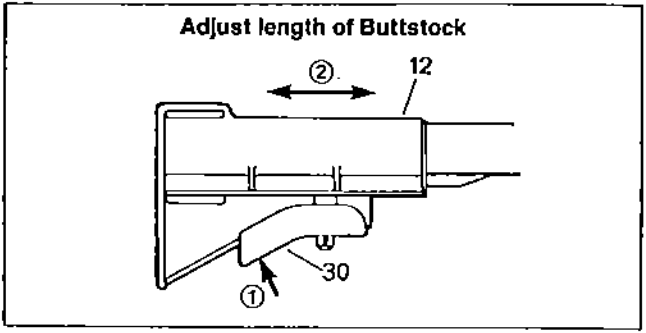


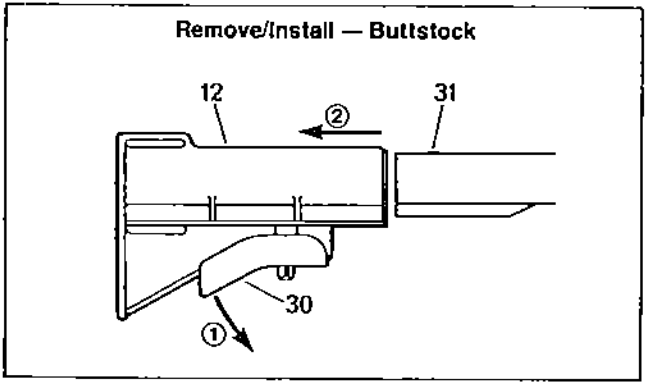




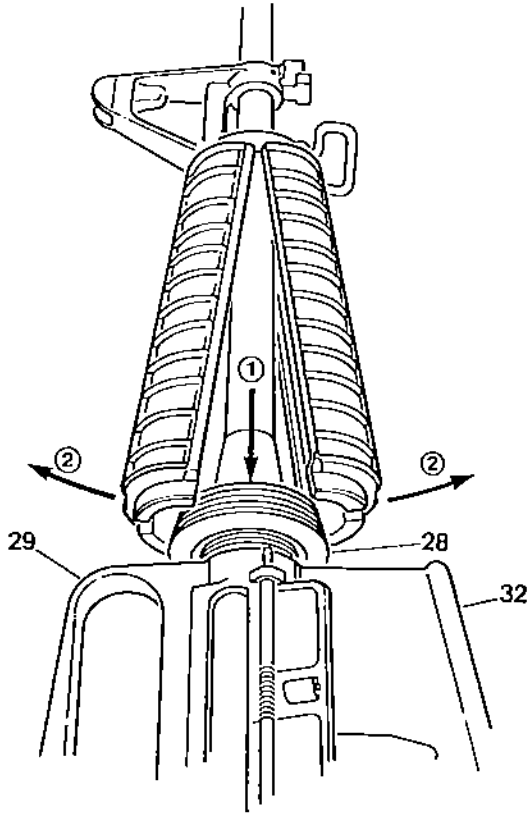
FIELD STRIPPING (Cont.)

10. Squeeze buttstock lever (30) and extend buttstock (12). Push lever down and pull buttstock off receiver extention (31).
11. Position upper receiver (29) so that muzzle points up and other end rests against a solid base. Pull handguard slipring (28) down until it clears handguards. Remove handguards by pulling them out and down.





Remove/Install — Handguards



MAINTENANCE (Cont.)

CLEANING MATERIALS

Cleaning and lubrication should be performed according to instructions in this manual, using a good grade of cleaner and lubricant. For best results, we recommend the use of Rifle Bore Cleaner, MIL-C-372 or equivalent and semi-fluid oil (LSA) MIL-L-46000A, or equivalent.

The use of combination cleaner/lubricants while more convenient to use, may require more frequent applications than when using LSA, and are recommended for use only under normal conditions. For maximum reliability of the weapon under heavy firing schedules or under adverse conditions, lubrication with LSA or equivalent is recommended.

Use appropriate cleaning kit which includes the following cleaning materials:

a. Bore brush.
b. Swab holder.
c. Cleaning rods.
d. Chamber brush (Not used on SMG-9mm).
e. Brush cleaning GP.
f. Oil bottle.
g. Bore cleaning fluid.
h. LSA — oil — or equivalent.
i. Pouch.
k. Pouch SMG-9mm.

a
b
c
d
e
f
g
h
i
k

MAINTENANCE (Cont.)

CLEANING PROCEDURE

Carbine & Commando Only

1. Use clean **dry** bore cleaning brush (a) to clean bolt carrier key (26). Insert brush into bolt carrier key (26) and rotate brush to remove carbon and powder residue.
2. Apply 4 drops of bore cleaning fluid to bore cleaning brush (a) and use brush to clean the bolt (21). Also clean the following parts:

   Gas rings (33)
   Rear and face of bolt (21a & 21b)
   Locking lugs (21c)
   Face of extractor (20)
   Firing Pin (16)

Note: Do not attempt to remove heat discoloration from bolt carrier.

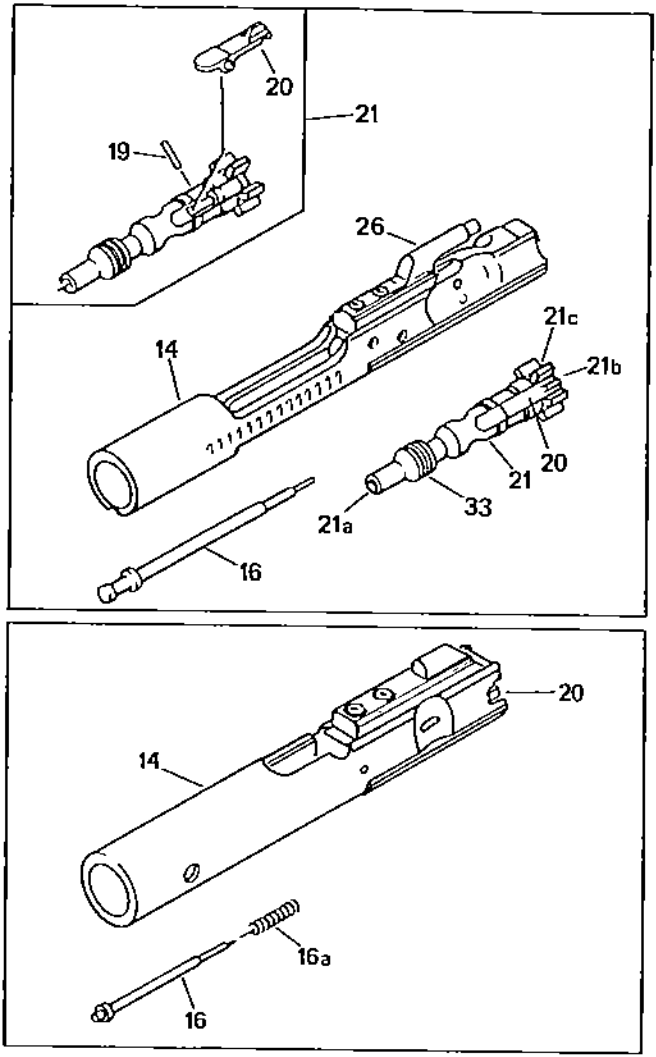
3. Install patch to patch holder (b), apply 4 drops of bore cleaning fluid and clean bolt carrier (14) inside and out.
4. Use clean cloth to wipe bolt and bolt carrier clean and dry.
5. Install chamber brush (d) on cleaning rod (c) and apply a few drops of bore cleaning fluid to brush.
6. Push brush into chamber (15) and rotate several times to clean chamber. Then plunge brush straight in and out of chamber several times to clean between locking lugs.
7. Remove chamber brush (d) from cleaning rod.

9mm SMG ONLY

8. Install a clean patch to patch holder, apply 4 drops of bore cleaning fluid and clean bolt (14) inside and out. Also clean the following parts:

   Firing Pin (16)
   Firing Pin Spring (16a)
   Face of Extractor (20) which remains installed in bolt. Do NOT remove extractor.

Then wipe all of those parts clean and dry with a clean cloth.


20
21
19
26
14
21c
21b
20
21
21a
33
16
20
14
16a
16

CLEANING (Cont.)

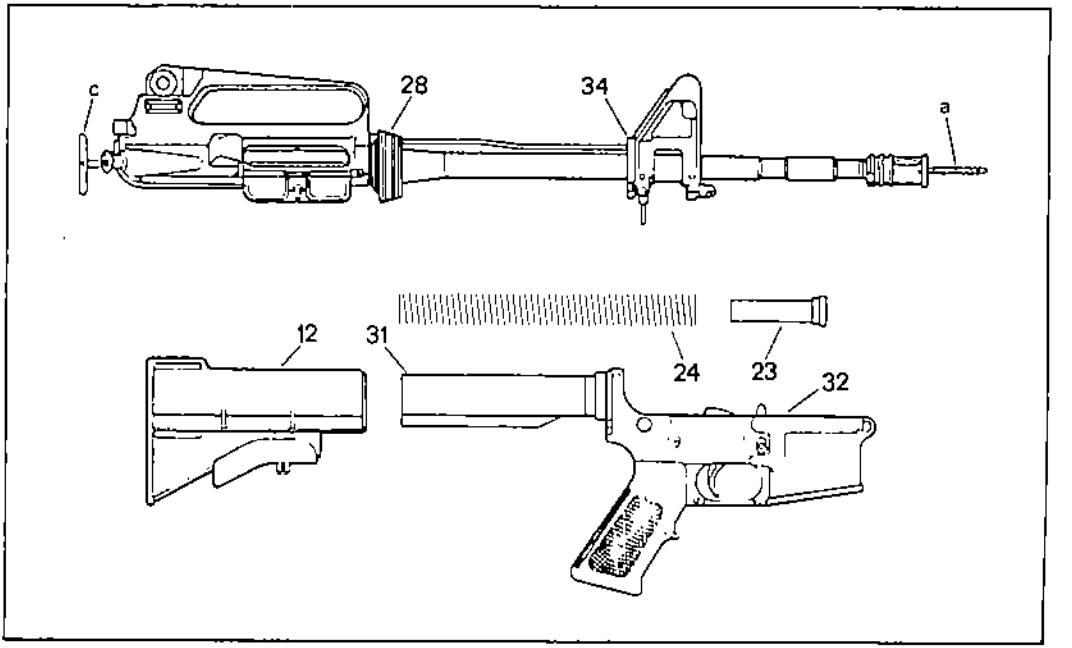
ALL WEAPONS

Note that a 5.56mm barrel takes a smaller bore brush (a) than that used on a 9mm barrel.

9. Attach bore brush (a) to cleaning rod (c). Apply a few drops of bore cleaning fluid to brush and be careful to avoid rubbing the cleaning rod on the muzzle because accuracy will be effected.

IMPORTANT: Do not move brush back and forth while it is in the barrel because the brush will stick.

10. Push brush (a) through entire length of bore from chamber end. Pull brush back through entire length of bore.
11. Repeat step 10 three times.
12. Remove brush (a) from cleaning rod (c). Install patch holder (b) on cleaning rod. Insert patch in holder.
13. Push rod and patch through entire length of bore. Pull rod back through entire length of bore.
14. Install a clean patch in holder and repeat step 13 until a clean patch comes out of the bore clean and dry.
15. Using a patch lightly oiled with LSA or equivalent, wipe the buffer (23), action spring (24), and lower receiver (32) and remove any dirt.
16. Clean inside of the lower receiver (32) and around its assembled parts with the dry paint brush.
17. Clean receiver extension (31) with a dry cloth.
18. Clean buttstock (12) with a dry cloth, inside and out.


c
28
34
a
12
31
24
23
32

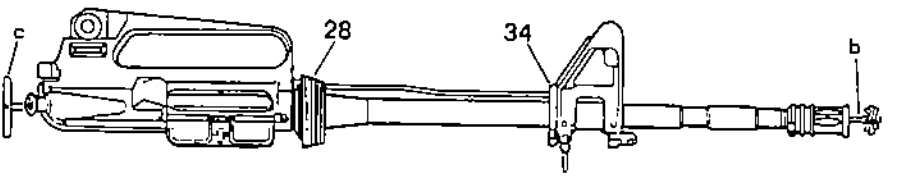
LUBRICATION

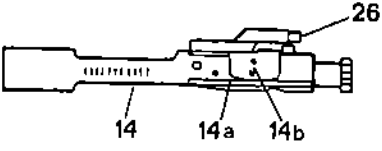
ALL WEAPONS

1. Install the patch holder (b) on the cleaning rod and insert a lightly oiled patch. Push the cleaning rod through the full length of the bore. Pull the rod from the bore. Make sure that the chamber remains dry.
2. Using a lightly oiled patch, wipe the outside of the barrel from the handguard cap (34) to the handguard slipring (28).
3. Wipe one drop of oil on each bolt/bolt carrier track (14a).

CARBINES & COMMANDO ONLY

4. Place one drop of oil in each bolt carrier hole (14b) and in the open end of the bolt carrier key (26).


c
28
34
b


26
14
14a
14b

ASSEMBLY

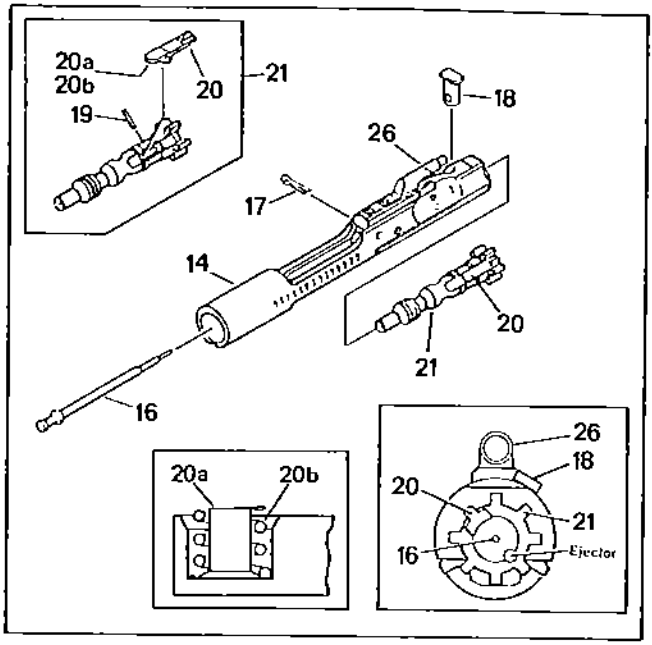
CARBINES & COMMANDO ONLY

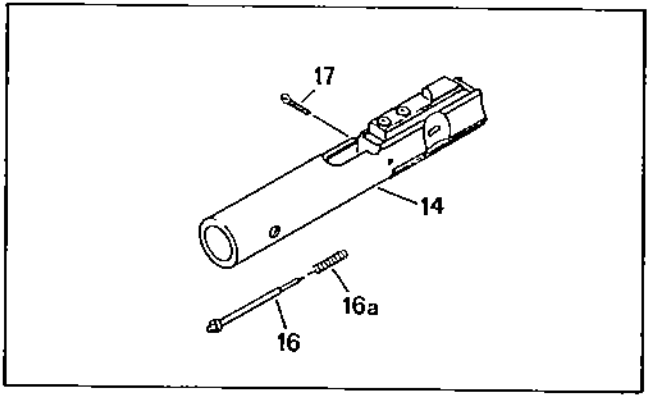
1. To assemble bolt (21), first look at the underside of the extractor (20) and ensure rubber insert (20a) and extractor spring (20b) are in place. They should NOT have been removed from the extractor. If they are not in place they must be installed properly by an armorer, as shown in the illustration. Place extractor assembly on bolt (21).
2. While holding extractor assembly (20) in place on bolt (21), insert extractor pin (19) through bolt and extractor.
3. With bolt (21) oriented to bolt carrier (14), as shown in sketch (inset), insert bolt in bolt carrier.
4. Align cam pin hole in bolt with end of cam slot in carrier furthest offset from carrier key (26).
5. Insert cam pin (18) and rotate pin ¼ turn.
6. Rotate bolt (21) until cam pin (18) is under bolt carrier key.
7. Insert firing pin (16) through rear of bolt carrier (14) and assemble firing pin to bolt (21). Push firing pin fully forward in bolt and install firing pin retaining pin (17).

9mm SMG ONLY

8. To assemble bolt assembly first install firing pin spring (16a) on firing pin (16).
9. Insert firing pin and spring through underside of bolt (14), push them fully forward and install firing pin retaining pin (17).

Note: Extractor should NOT have been removed from 9mm bolt.


20a
20b
19
20
21
18
26
17
14
20
21
16
20a
20b
26
18
20
21
16
Ejector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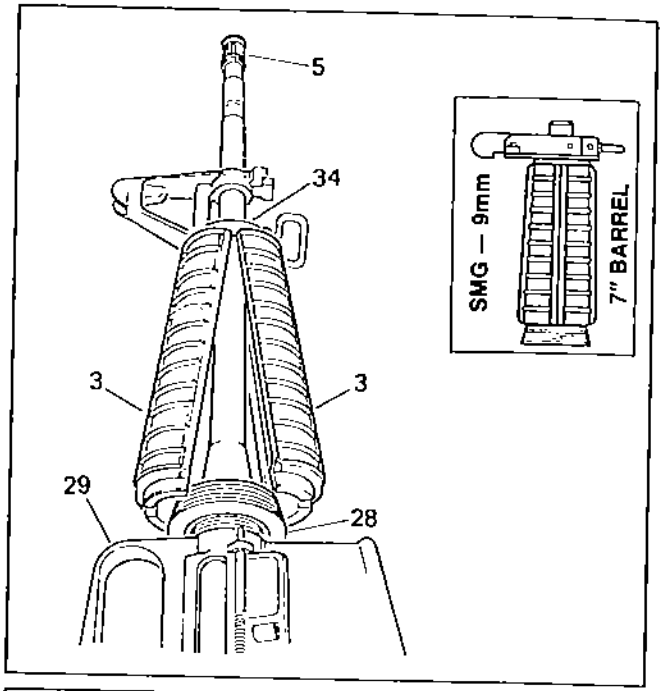
16a
16

ALL WEAPONS (UPPER RECEIVER)

10. Position upper receiver (29) with muzzle up and other end against a solid base.
11. Push forward ends of handguards (3) up into handguard cap (34).
12. Pull slipring (28) down until lower ends of handguards clear slipring. Release slipring over ends of handguards to retain them.
13. Place charging handle (1) in upper receiver (29). Push charging handle forward until three inches from full forward position.
14. Place bolt carrier key (26) in slot of charging handle (1). Push forward on bolt carrier and charging handle until fully closed.

(Use same method to install 9mm bolt in SMG)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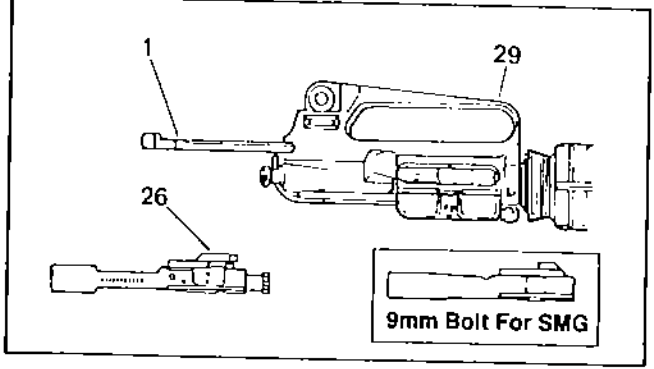
SMG — 9mm
7" BARREL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26
9mm Bolt For SMG

ASSEMBLY (Cont.)

(LOWER RECEIVER)

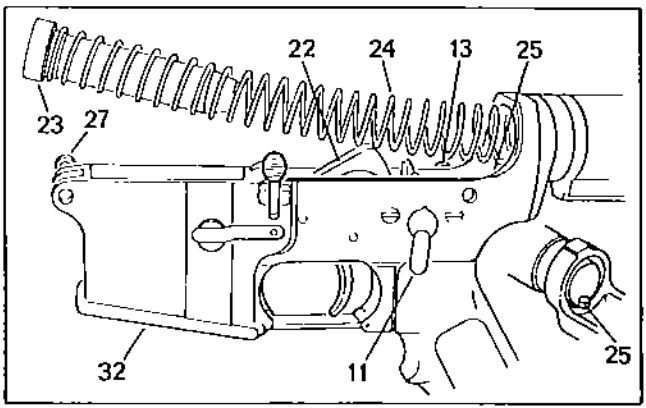
15. Push lever (30) down and slide buttstock (12) onto receiver extension (31).
16. Insert buffer (23) into action spring (24) and slide them into lower receiver (32). Push buffer inward until buffer retainer (25) snaps up to hold buffer in place.
17. Assemble upper receiver (29) to lower receiver (32) so that pivot pin holes (27) are aligned. Push pivot pin (27) in.
18. Push hammer (22) to rear until locked.
19. Move selector lever (11) to SAFE.

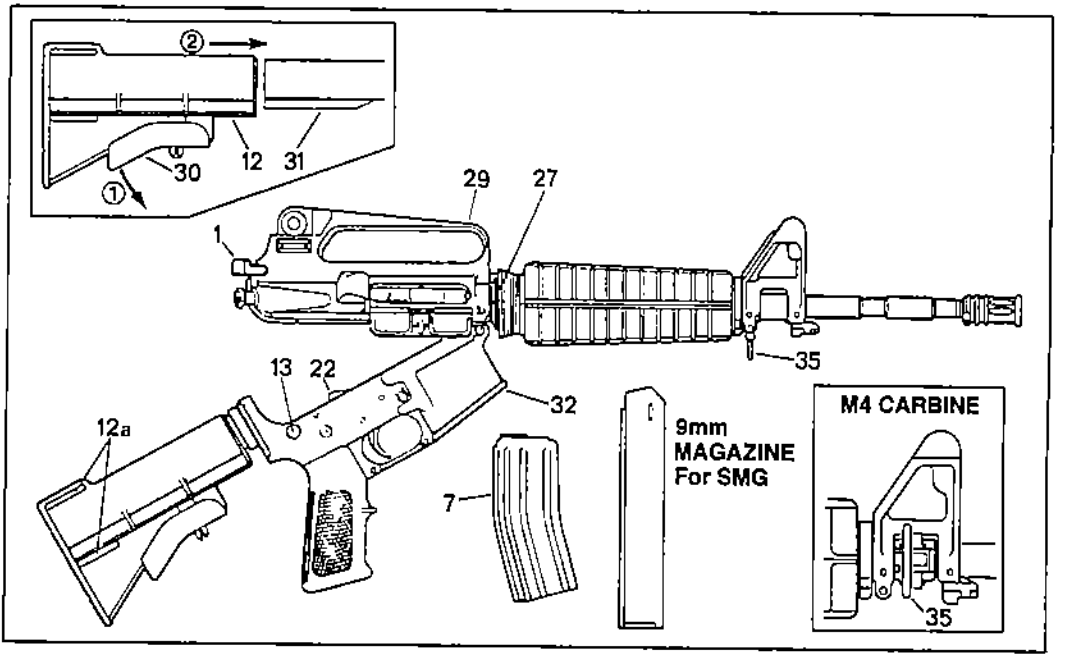
IMPORTANT: Failure to move selector lever (11) to SAFE position before closing receivers may cause the sear to be damaged.

18. Close receivers and press in takedown pin (13).

Attach sling through buttstock slot (12a). Insert sling through forward sling swivel (35). Insert sling through clip. Close clip.

See M4 Carbine sling swivel (35) inset.




②
①
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12a
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9mm
MAGAZINE
For SMG
M4 CARBINE
35

FUNCTIONAL CHECKS

The functional checks should always be done after cleaning and assembling the weapon. When it fails any functional check, make sure the weapon is clean and assembled properly. If it still fails, give it to unit armorer for repair.

1. **Remove magazine and clear chamber to ensure rifle is not loaded.**

Checking Safety

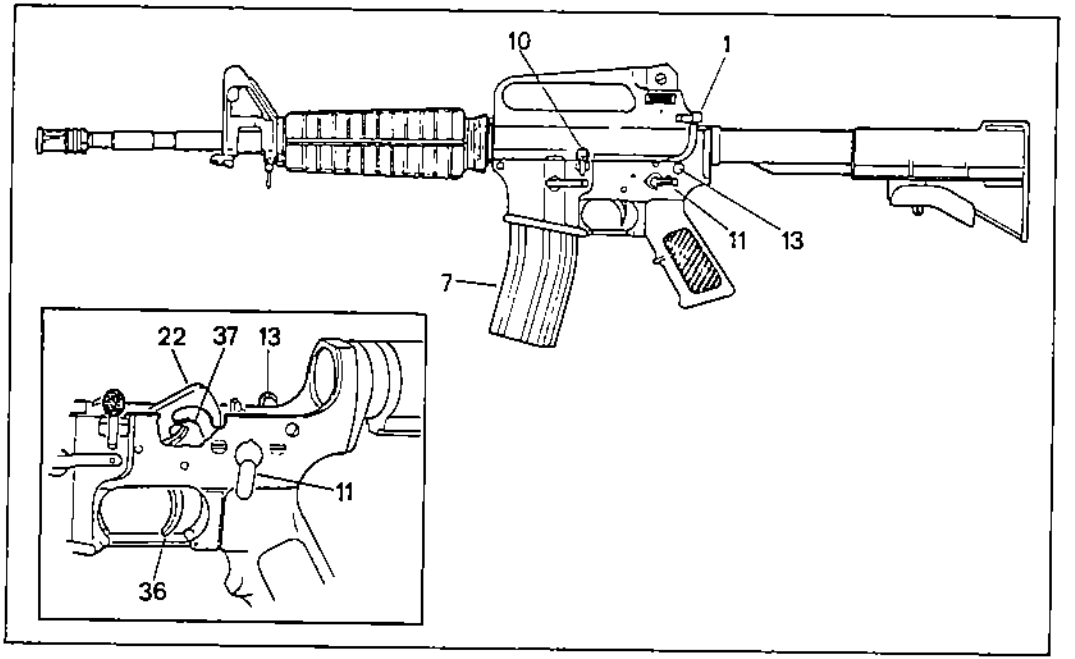
2. Pull charging handle (1) to rear and release it.
3. Set selector lever (11) on SAFE.
4. Pull trigger (36). You should hear nothing as hammer (22) should not fall. Release trigger.

Checking Semi

5. Set selector lever (11) on SEMI.
6. Pull trigger (36). You should hear a loud click as hammer falls. Keep trigger pulled.
7. Pull charging handle to rear and release it while keeping trigger pulled. Hammer should not fall but be held by the disconnect (37).
8. Release trigger. You should hear a light click as hammer is released from the disconnect and drops part way to engage with trigger sear.

Checking Automatic Action (Burst or Auto)

9. Set selector lever (11) on BURST or AUTO.
10. Pull and keep trigger pulled. You should hear loud click as hammer falls.
11. Pull charging handle to rear and release it while keeping trigger pulled.
12. Release trigger and listen for light click as hammer and trigger sear engage. Light click should be heard **only** on BURST and then only on one out of three cycles.
    BURST: If there is no click, pull and keep trigger pulled and repeat steps 11 and 12 up to 3 times, until a light click is heard when trigger is released.
    AUTO: No click should be heard.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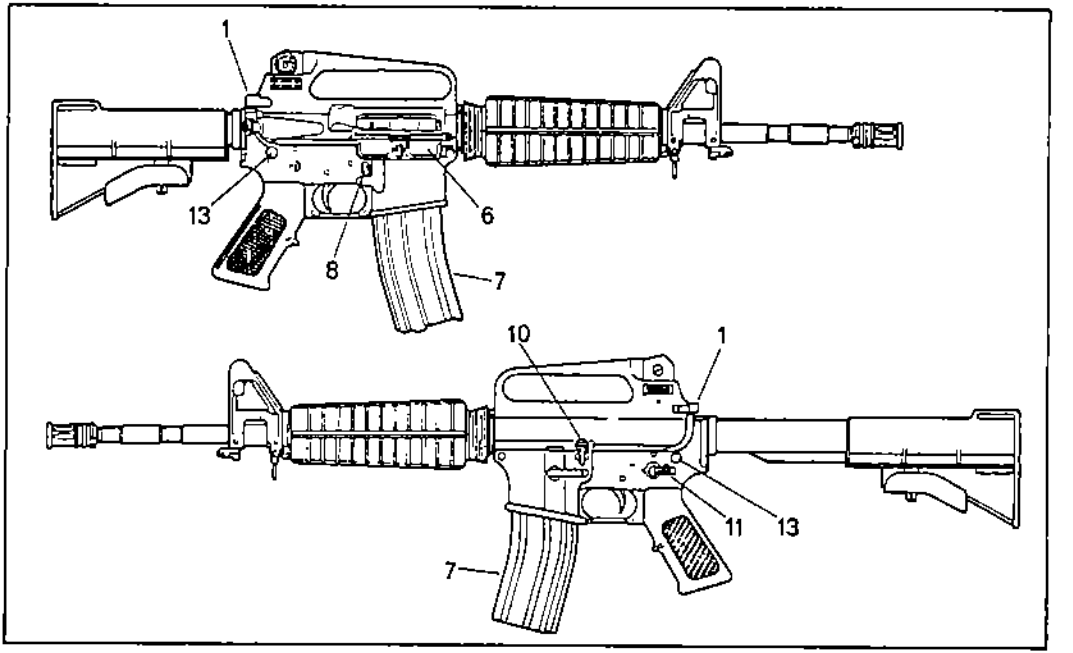
FUNCTIONAL CHECK (Cont.)

13. Pull trigger
    BURST: You should hear loud click as hammer falls.
    AUTO: No click should be heard.
    Keep trigger pulled.
14. Pull and release charging handle while keeping trigger pulled.
15. Release trigger. *No* click should be heard.
16. Pull trigger. *No* click should be heard. Keep trigger pulled.
17. Pull and release charging handle while keeping trigger pulled
18. Release trigger. *No* click should be heard
19. Pull trigger. *No* click should be heard. Keep trigger pulled.
20. Pull and release charging handle while keeping trigger pulled
21. Release trigger
    BURST: You should hear light click.
    AUTO: No click should be heard.
22. Pull trigger
    BURST: You should hear loud click as hammer falls.
    AUTO: No click should be heard
23. Release trigger. No click should be heard

Checking Magazine Catch and Bolt Catch

24. Install an empty magazine (7) and check that it is locked in place by the magazine catch (8).
25. With empty magazine installed, set fire control selector (11) on SEMI
26. Pull charging handle (1) fully back and then push it forward into locked position. Bolt carrier assembly should be held to the rear by the bolt catch (10).
27. KEEP FINGERS CLEAR OF EJECTION PORT. Push top of bolt catch (10) to release bolt carrier assembly which will slam forward into the locked position. Release top of bolt catch (10).
28. Set fire control selector (11) on SAFE.
29. Close ejection port cover (6).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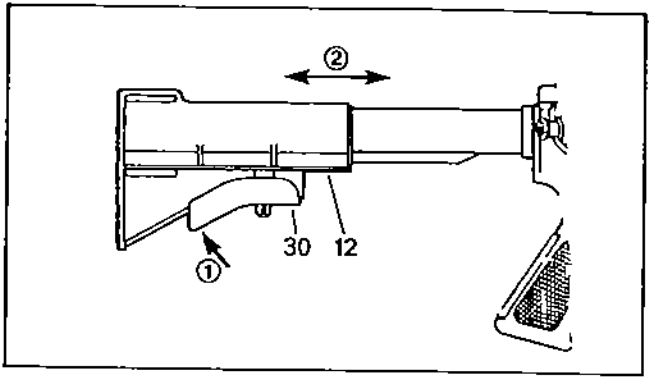
FUNCTIONAL CHECK (Cont.)

Checking Buttstock

30. Squeeze lever (30) and slide buttstock (12) fully forward. Release lever and check that buttstock locks in position.

31. Squeeze lever (30) and slide buttstock (12) fully rearwards. Release lever and check that buttstock locks in position.



MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
Failure to fire.	1. Selector lever on SAFE.	Move selector to SEMI or AUTO or BURST.
	2. Damaged firing pin.	Replace.
	3. Improper assembly of firing pin in bolt carrier group.	Remove firing pin and install correctly. Inspect retaining pin for damage.
	4. Too much oil in bolt firing pin recess.	Disassemble bolt and wipe out excess oil.
	5. Fire control mechanism improperly assembled or with worn, broken or missing parts	Unit armorer repair
	6. Trigger pin improperly installed.	Unit armorer remove and install from left side.
Failure to unlock (bolt seizes—will not rotate from locked position).	1. Bolt group, firing pin, or barrel burred, dirty or carboned-up.	Set selector lever (11) to SAFE. Remove magazine. Hold weapon pointing up (stay clear of muzzle) and strike butt sharply and squarely on ground while pulling back on charging handle.* Remove bolt group, clean and lubricate.

***CAUTION: MAKE CERTAIN TO BE CLEAR OF MUZZLE. STRIKE BUTT SQUARELY ON GROUND TO PREVENT DAMAGE TO BUTTSTOCK.**

(36)	Failure to extract.	1. Dirty or corroded ammunition.	Remove ammunition from magazine and clean both.
		2. Carbon and dirt build-up in chamber	Clean chamber.
		3. Carbon and dirt build-up in extractor recess or extractor lip.	Disassemble and clean.
		4. Defective extractor, extractor spring or pin	Replace.
		5. Rubber insert not assembled in extractor spring.	Unit armorer replacement.
		6. Rim shear due to badly pitted chamber.	Unit armorer replacement.
		7. Separated cartridge case caused by excessive headspace, etc.	Unit armorer repair.
	Failure to eject.	1. Broken ejector. 2. Jammed ejector.	Unit armorer repair.
		3. Weak or broken ejector. 4. Short recoil.	See "Short Recoil" in malfunction column.

Failure to remain cocked.	1. Worn, broken, or missing parts in fire control mechanism.	Unit armorer repair.
	2. Hammer pin incorrectly installed.	Unit armorer to remove and install correctly.
Failure to feed.	1. Magazine not seated properly.	Magazine catch may not be properly adjusted. Unit armorer adjustment.
	2. Dirty or corroded ammunition.	Remove ammunition from magazine and clean both.
	3. Dirty magazine.	Disassemble and clean.
	4. Defective magazine.	Replace.
	5. Too many rounds in magazine.	Reload.
	IMPORTANT: Do not load the magazine beyond its rated capacity (20 rounds or 30 rounds; 32 rounds on 9mm SMG).	
	6. Restricted buffer action.	Remove, clean and lubricate buffer and action spring.
	7. Short recoil.	See Short Recoil in malfunction column.
Double feed.	1. Defective magazine.	Replace magazine.

(38) Failure to chamber.	1. Dirty or corroded ammunition.	Remove ammunition from magazine and clean both.
	2. Restricted movement of bolt carrier group.	Disassemble, thoroughly clean and lubricate the weapon. Remove charging handle from upper receiver, point receiver upward, and install bolt carrier group in receiver. Slowly slide carrier in receiver to check alignment and free movement of carrier key and gas tube. If binding occurs, unit armorer to repair.
	3.*Bolt cam pin missing.	Replace.
	4. Loose or damaged bolt carrier key.	Unit armorer repair.
	5.*Improperly assembled extractor spring.	Check with unit armorer for proper installation.
	6.*Bent gas tube.	Unit armorer repair.
	7.*Carrier key and gas tube misaligned.	Unit armorer repair.

*** Not for 9mm SMG.**

Failure to chamber (cont.)	8. Damaged ammunition.	Replace.
	9. Carbon build-up in chamber.	Clean chamber.
Failure to lock.	1.*Dirt, corrosion and carbon build-up on bolt or barrel locking lugs.	Clean.
	2. Jammed extractor.	Clean and lubricate.
	3. Dirt on bolt face.	Clean.
	4. Jammed ejector.	Unit armorer repair.
	5. Restricted buffer movement.	Remove, clean and lubricate buffer, action spring and inside receiver extension.
	6. Damaged ammunition.	Replace.
	7. Weak or broken acton spring.	Replace.
Short recoil.	1.*Gaps in bolt rings not staggered.	Stagger bolt ring gaps.
	2.*Carbon build-up or dirt in carrier key and on outside of gas tube.	Clean and lubricate bolt carrier group and outside of gas tube.
	3. Restricted movement of bolt carrier group or buffer.	See "Failure to Lock" in malfunction column.

*** Not for 9mm SMG.**

Short recoil (cont.)	4.*Missing or broken bolt rings or loose carrier key.	Unit armorer repair.
	5. Gas leakage due to loose or broken gas tube.	Unit armorer repair.
	6. Restricted gas flow.	Unit armorer repair.
Bolt fails to lock to rear after last shot fired.	1. Dirty or corroded bolt catch.	Clean and lubricate. If further disassembly is necessary, hand to unit armorer for repair.
	2. Faulty magazine.	Replace.
	3. Broken bolt catch or spring.	Unit armorer repair.
Failure to cycle with selector set at AUTO.	1. Worn, broken or missing parts in fire control mechanism.	Unit armorer repair.
Fires with selector set on SAFE.	1. Worn, broken or missing parts in fire control mechanism.	Unit armorer repair.
With selector on SEMI, fires when trigger released.	1. Worn, broken or missing part in fire control mechanism.	Unit armorer repair.
Selector lever binds.	1. Lack of cleanliness or lubrication.	Unit armorer repair.

*** Not for 9mm SMG.**

The following 2 malfunctions apply only to weapons with BURST control.

Fires fewer than 3-rounds with selector lever set to BURST.	1. Selector lever set to SEMI	Set selector lever to BURST.
	2 Normal on first and last burst depending on position of burst control and number of rounds in magazine	Pull trigger immediately to get next full 3-round burst after first burst. Reload and carry on firing after last burst.
	3. Trigger released early.	Pull trigger (burst will also be fewer than 3) then pull trigger again for next full 3-round burst
	4. Worn, broken or missing parts in fire control mechanism	Unit armorer repair
Fires more than 3 rounds with selector lever set to burst.	1 Worn, broken or missing parts in fire control mechanism.	Unit armorer repair.

Note: Most of the malfunctions already listed could also be caused by damaged, faulty or dirty ammunition. Where this is especially likely, a particular note has been included in the list but in other instances time could be saved by making sure that the ammunition is good before investigating the weapon.

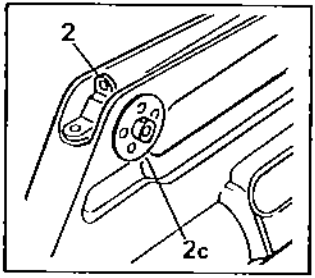
OPERATION

IMPORTANT: Warnings and procedures in this Operation Section must be read and fully understood before operating the firearm.

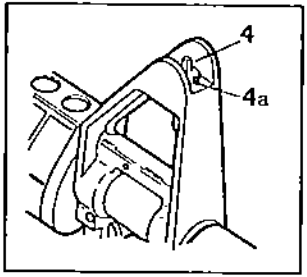
FIELD SIGHTS — M16A2 CARBINE, COMMANDO and SMG-9mm WEAPONS.

For fully adjustable sights — see page 44.

Rear sight (2) — adjustable for windage only



Front sight (4) — adjustable for elevation when used with field sight



USE OF SIGHTS

1. Adjust windage on rear sight.
2. Adjust elevation on front sight post (4) while depressing detent (4a).
3. Rear sight (2) has windage drum (2c).

   Turn drum **clockwise** to move point of impact to **right**.

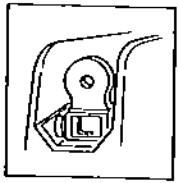
   Turn drum **counter-clockwise** to move point of impact to **left**.
4. Rear sight (2) also has a 2-aperture flip-type (peep) sight for short and long range sighting.

FIELD SIGHTS (Cont.)

M16A2 Carbine and Commando

Aperture in rear leaf is for LONG range (300 - 500m) and is marked "L".

Aperture in other leaf is for SHORT range (0 - 300m) and is unmarked. Flip field sight forward to select LONG range and back for SHORT range.



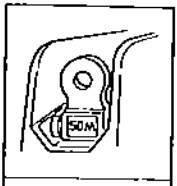
9mm SMG

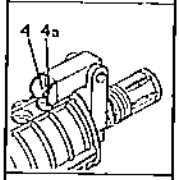
Aperture in rear leaf is for SHORT range (0 - 50m) and is marked 50m.

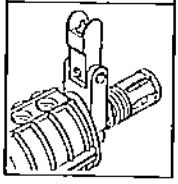
Aperture in other leaf is for LONG range (50 - 100m) and is unmarked.

Flip field sight forward to select SHORT range and back for LONG range.

On 7 in. barrels front sight folds back when not needed. Flip up and forward when sights are to be used.







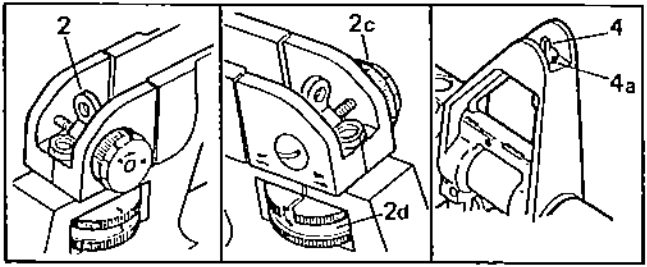
5. Front sight post on these weapons may be turned to adjust for elevation. Turn front sight post **clockwise** to lower sight and bring point of impact **UP**.

   Turn front sight post **counter-clockwise** to raise sight and bring point of impact **DOWN**.

   To adjust front sight, push detent (4a) down and at the same time turn sight post (4).

NOTE: On other weapons with fully adjustable rear sights all elevation adjustment is made on the rear sight.

FULLY ADJUSTABLE SIGHTS — M4 CARBINE and variants of other Carbines and Commando Weapons only.

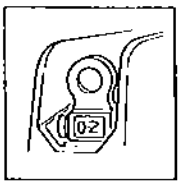


Rear sight — adjustable for windage and elevation

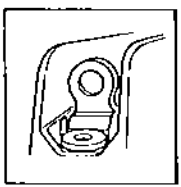
Peep sight (2) Set for long range 300-800m with small aperture up

Front sight (4) adjustable for zeroing only

1. Rear sight adjustable for windage (2c) and elevation (2d), and has two apertures on a flip-type peep sight — one for short range, and the other for long range. The sight is calibrated to make effective use of M855 ball ammunition.



2. The peep sight when flipped forward brings the large aperture, marked "0-2", into use for short ranges of 0m to 200m. When firing within this range, the elevation knob should be set to "8/3" with the sight base at its lowest position.



3. The peep sight when flipped back brings the small aperture into use for long ranges 300m to 800m, and a small indicator line matches up with the windage calibration-lines on the back of the sight base. With the small aperture in use, the elevation knob should be set at the range required: 8/3 low for 300m, 4 for 400m, 5 for 500m, 6 for 600m, 7 for 700m and 8/3 high for 800m. The elevation setting is made by turning the knob (2d) until the range line on the knob lines up with the white line on left

FULLY ADJUSTABLE SIGHTS (Cont.)

side of sight base. There are also additional clicks between the main settings to allow fine adjustment of range

4. A windage knob (2c) on the right and above the elevation knob is adjustable such that each click moves point of impact horizontally on the target. To move point of impact to right, turn windage knob clockwise; to move point of impact to left, turn windage knob counter-clockwise.
5. Square blade front sight post (4) is adjustable in elevation for zeroing only. It is not used to adjust elevation at any other time when used with a fully adjustable rear sight.
6. There are differences in elevation adjustment between the rear sights in a standard handle and those in the flattop removable handle. The effect of one click adjustment in windage and elevation are shown in the following table:

ONE CLICK ADJUSTMENT	SIGHT ON STANDARD HANDLE	SIGHT ON REMOVABLE HANDLE
Minute of Angle:		
Windage	0.65'	0.65'
Elevation	1.43'	0.65'
Change in point of Bullet Impact at 100 yards (100m):		
Windage	0.68in (1.73cm)	0.68in (1.73cm)
Elevation	1.50in (3.81cm)	0.68in (1.73cm)

WARNING: IF THIS FIREARM IS CARELESSLY OR IMPROPERLY HANDLED, UNINTENTIONAL DISCHARGE COULD RESULT AND COULD CAUSE INJURY, DEATH OR DAMAGE TO PROPERTY. (Also see inside front cover for more WARNINGS.)

WARNING: IF THE BARREL IS VERY HOT FROM FIRING THERE IS A RISK OF *COOK-OFF* (THAT IS A ROUND IN THE CHAMBER DISCHARGING BY ABSORBING HEAT FROM THE BARREL.) A COOK-OFF CAN OCCUR ANY TIME AFTER CHAMBERING A ROUND IN A VERY HOT BARREL. (See page 54 for more information).

WARNING: DO NOT ATTEMPT TO FIRE IF WATER IS IN THE BARREL FROM FORDING, HEAVY RAIN OR THICK FOG. OPEN THE BOLT AND ALLOW WATER TO DRAIN BEFORE FIRING. CLEAN A WET WEAPON AS SOON AS POSSIBLE. (See page 55 for more information).

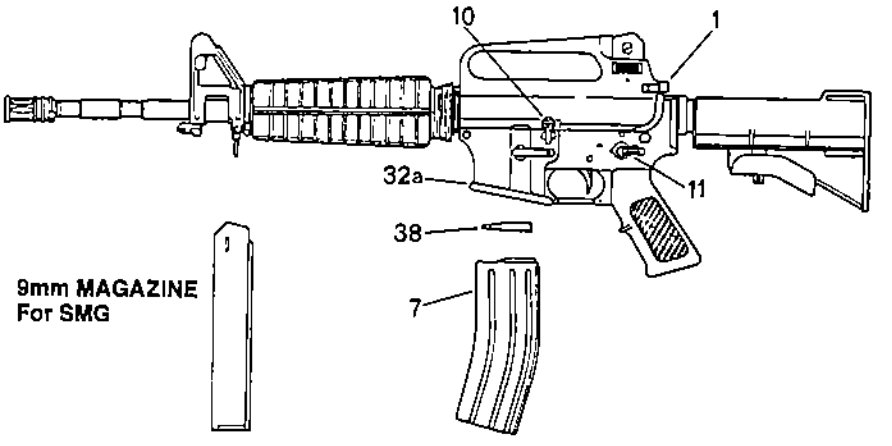
LOADING

1. Place round (38) in magazine (7) and press down.
2. Repeat step 1 until magazine is loaded with required number of rounds. (Maximum is 20 or 30; 32 on 9mm SMG)
3. Pull charging handle (1) to rear. Push in lower portion of bolt catch (10). Push charging handle forward to latched position.

CAUTION: BE SURE FIRE CONTROL SELECTOR (11) IS IN SAFE POSITION PRIOR TO LOADING.

4. Set fire control selector (11) on SAFE.
5. Insert magazine (7) into magazine housing (32a) and ensure magazine catch is engaged.
6. Press upper portion of bolt catch (10) to release bolt and chamber round.

CAUTION: WEAPON IS NOW LOADED. IF IT IS *NOT* TO BE FIRED, UNLOAD THE WEAPON AS EXPLAINED ON PAGE 50.


10
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32a
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38
9mm MAGAZINE
For SMG
7

AIMING AND FIRING

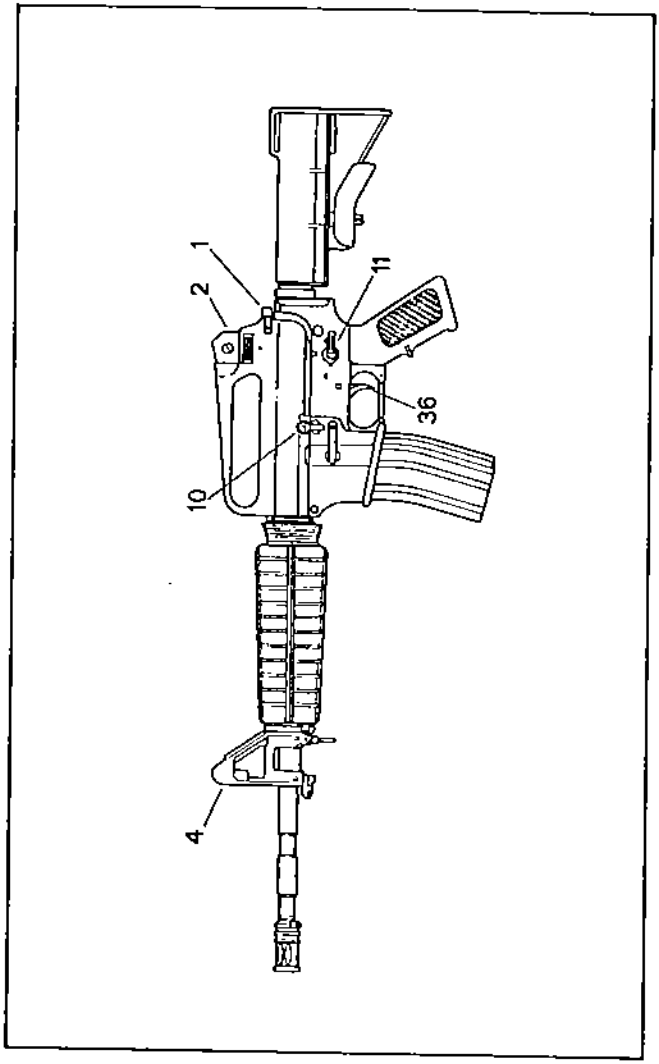
CAUTION: KEEP WEAPON POINTING IN SAFE DIRECTION AND LOAD A ROUND INTO THE CHAMBER. (See steps 1, 2, 3, but if round is already in chamber skip to step 4.)

1. Pull charging handle (1) to rear. Press lower portion of bolt catch (10). Push charging handle forward to latched position.
2. Set fire control selector on SAFE.
3. Insert loaded magazine and push upper portion of bolt catch to release bolt and chamber a round.

CAUTION: WEAPON IS NOW READY TO FIRE.

4. Assess range to target and set sights.
   (Sights are described on pages 42 to 45).
5. Set fire control selector (11) on SEMI or AUTO (or BURST).*
6. Hold weapon with both hands; one hand on handguard, the other on pistol grip.
7. Align the target with top of front sight (4) and center of rear peep sight aperture.
8. Pull trigger (36) to fire 1 round Semi or any number of rounds on Auto up to magazine capacity.*
9. Release trigger and set fire control selector (11) on SAFE.

* **Note:** The M4 Carbine and some other weapons have 3 Round BURST control in place of AUTO. When BURST is selected, the first and last burst may be 1, 2 or 3 rounds depending on position of burst control mechanism and number of rounds in magazine. Between first and last, all bursts are limited to 3 rounds. Trigger (36) must be released and squeezed again to fire next burst of 3 rounds.


1
2
11
36
10
4

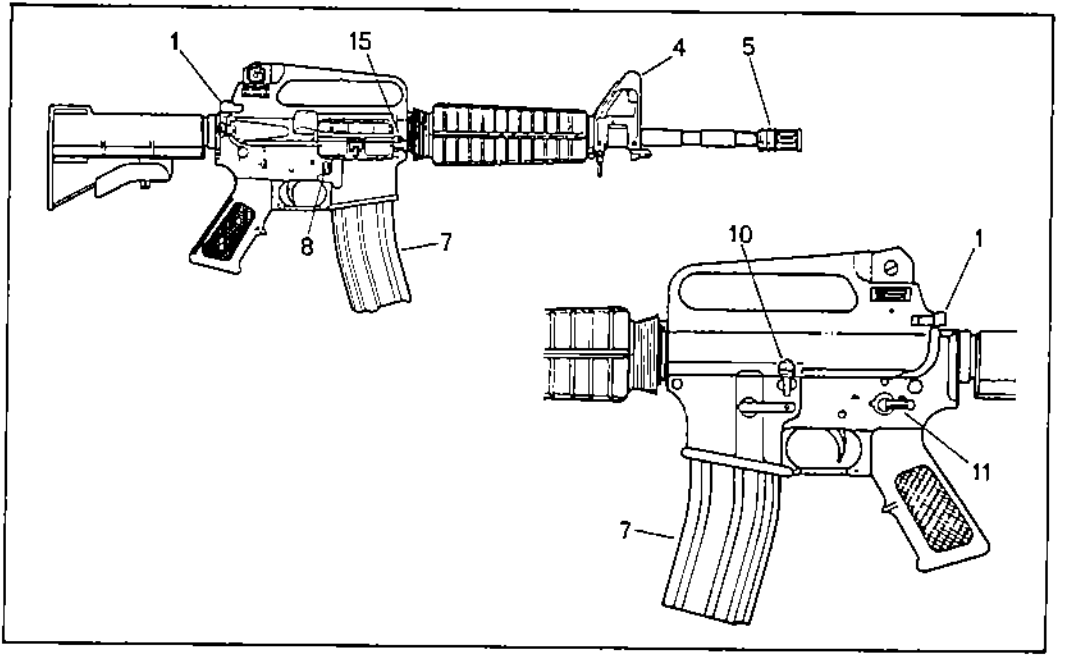
UNLOADING

1. Set fire control selector (11) on SAFE and keep weapon pointing in a safe direction.
2. Press magazine catch (8) and remove magazine (7).
3. Pull charging handle (1) to rear. Check that cartridge is ejected from chamber (15).*
4. While holding charging handle to rear, push in lower portion of bolt catch (10). Push charging handle forward to latched position.

CAUTION: WEAPON IS CLEAR ONLY WHEN CHAMBER (15) IS EMPTY, MAGAZINE (7) REMOVED, BOLT CARRIER IS TO REAR AND FIRE CONTROL SELECTOR (11) IS ON SAFE.

* **Note:** If cartridge is not ejected, ensure barrel is cool to avoid risk from cook-offs, then proceed as follows:

1. Pull charging handle (1) to rear. While holding charging handle to rear, push in lower portion of bolt catch (10). Push charging handle forward to latched position.
2. Insert the cleaning rod through the flash suppressor (5) to the chamber (15) and push the cartridge out.
3. Cartridge should NOT be used again because it may be damaged, and should be disposed of properly.


1
15
4
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8
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11
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STOPPAGE AND IMMEDIATE ACTIONS

Stoppage — a stoppage is any unintentional interruption of firing.

Immediate Action — immediate action is the action taken as rapidly as possible to correct a stoppage without analyzing the cause. Immediate action is as follows:

1. Tap upward on the bottom of the magazine to be sure it is locked in position. Pull charging handle fully and sharply to the rear. Watch for ejection of a fired or unfired round.
2. If a cartridge or case is ejected, release the charging handle sharply to chamber a new round (do not "hang on" to the charging handle as it goes forward.)
3. *Strike forward assist to ensure bolt closure.
4. Attempt to fire. If weapon fails to fire, inspect to determine the cause of the malfunction and take appropriate action. (See Malfunctions and Trouble Shooting, Page 36).
5. If a cartridge or case is not ejected, check to see if there is a round in the chamber. If the chamber is clear, release the charging handle to feed a new round and attempt to fire. If the weapon still fails to fire, refer to Malfunction, page 36.
6. If a cartridge or case is seen in the chamber, and the barrel is cool or just warm, the cartridge or case should be removed as explained on page 50.

CAUTION: SEE DANGEROUS SITUATIONS ON NEXT PAGE FOR EMERGENCY IMMEDIATE ACTIONS.

* There is no forward assist on 9mm SMG.

DANGEROUS SITUATIONS

Misfires and Cook-offs

Although misfires are rarely encountered with properly maintained weapons and clean ammunition, misfires and cook-offs are potentially dangerous, particularly if a heavy firing schedule is being followed. It is important that proper corrective action be taken rapidly.

Misfire — A misfire is a failure to fire when the hammer falls due to mechanism malfunction or faulty cartridge. The cartridge should be ejected immediately.

Dispose of the cartridge properly.

DANGEROUS SITUATIONS (Cont.)

Cook-off

A cook-off is accidental firing of a chambered round caused by the cartridge absorbing excess heat from a very hot barrel. The live cartridge may have failed to eject when clearing the weapon, or it may have been fed into the chamber ready for the next shot. It may also remain in the chamber if it misfired or failed to fire. Whatever the reason, when a live round remains in the chamber when the barrel is very hot there is a risk of accidental discharge.

WARNING: A COOK-OFF CAN OCCUR ANY TIME AFTER CHAMBERING A ROUND IN A VERY HOT BARREL, SO KEEP WEAPON POINTING IN A SAFE DIRECTION.

Immediate Action — To prevent damage or injury from cook-off when barrel is very hot complete the following actions immediately.

1. Remove magazine
2. Pull charging handle fully rearward. If chamber is empty, lock action open by pressing in bottom of bolt catch. If round remains in chamber, skip step 3 and see step 4.
3. Allow barrel to cool for 15 minutes.
4. If round remains in chamber, release charging handle, allow bolt to move forward.
5. Fire round if safe to do so. If not safe, see step 6.
6. If not safe to fire - lay weapon on the ground pointing in a safe direction with ejection port toward the ground, and step back.
7. Stand clear and keep others clear, and wait 15 minutes for barrel to cool.

WARNING: COOK-OFF COULD OCCUR DURING THIS COOLING PERIOD.

8. After barrel is cool, remove round from chamber as described on page 50, then have weapon checked by the unit armorer before firing again.

Water in the Barrel

WARNING: DO NOT ATTEMPT TO FIRE IF WATER IS IN THE BARREL FROM FORDING, HEAVY RAIN, OR HEAVY FOG. SNOW, MUD, SAND AND ANY OTHER OBSTRUCTION MUST BE REMOVED FROM THE BARREL BORE BEFORE FIRING. If you attempt to fire with any kind of obstruction in the barrel, it may BULGE or BURST.

1. To remove water from the barrel, hold the rifle muzzle down, pull the charging handle to the rear about a half (.5) inch, (1.2 cm) to vent the barrel and at the same time shake the weapon vigorously.
2. Release charging handle.
3. The weapon can now be fired.

Note: Clean and lubricate the weapon as soon as possible after clearing any obstruction, or whenever it has been wet.

Bullet in Barrel

CAUTION: IF A NOTICEABLE DIFFERENCE IN SOUND OR RECOIL IS EXPERIENCED, STOP FIRING. A BULLET COULD BE STUCK IN THE BARREL. IF A BULLET IS STUCK IN THE BARREL, GIVE RIFLE TO ARMORER TO DISLODGE THE BULLET.

HEALTH AND ENVIRONMENTAL WARNING

Discharging firearms in poorly ventilated areas, cleaning firearms, or handling ammunition may result in exposure to lead and other substances known to cause birth defects, reproductive harm, cancer, and other serious physical injury. Have adequate ventilation at all times. Wash hands thoroughly after exposure.

NOTES

COLT'S MANUFACTURING COMPANY, INC.
P.O. BOX 1868
HARTFORD
CONNECTICUT 06144-1868
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Printed in USA

FIVE BASIC SAFETY RULES

1. ALWAYS KEEP THE GUN POINTED IN A SAFE DIRECTION.
2. KEEP FIRE CONTROL SELECTOR ON SAFE UNTIL READY TO FIRE.
3. UNLOAD WHEN NOT IN USE.
4. ALWAYS ENSURE A GUN IS NOT LOADED BEFORE CLEANING, DISMANTLING OR STORING.
5. PRACTICE HANDLING AN EMPTY GUN BEFORE ATTEMPTING TO FIRE.

Warning - English
If there is anything you do not understand, get help from someone qualified in the safe handling of firearms.

Avvertimento Italiano
Se c'e qualcosa che non riuscite a capire, rivolgetevi a qualcuno che sia qualificato nel manegglare in maniera sicura le armi da fuoco.

Advertencia en Español
Para cualquier aclaración de esta manual, consulte con alguna persona perita en el manejo seguro de armas de fuego.

Message Secutaire en Francais
Pour tous renseignments complementaires, veuillez consulter un armurier qualifie dans le maniement de cesarmes.

Deutsche Sicherheitshinweise
Sollten Sie noch weitere Fragen haben, wenden Sie sich bitte an einen Waffenspezialisten.